

July 2015

Gray County

Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors

A total of 17 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Gray County economy.¹ These 17 sectors have a total direct output of approximately \$565 million and support 817.1 jobs in Gray County. Running the model for all 17 sectors simultaneously produces the following results:

Agriculture Contribution in Gray County

Impact Type ²	Employment	% of Total Employment	Total Value Added ³	% of Gross Regional Product ⁴	Output ⁵	% of Gross Regional Product
Direct Effect	817.1	19%	\$192,375,335	47%	\$564,770,063	137%
Indirect Effect	446.2	10%	\$38,997,270	9%	\$67,649,329	16%
Induced Effect	178.5	4%	\$14,249,690	3%	\$23,514,518	6%
Total Effect	1,441.8	34%	\$245,622,295	60%	\$655,933,910	159%

As shown in the above table, agriculture, food, and food processing supports 1,441.8 jobs, or 34% of the entire workforce in the county. These industries provide a total economic contribution of approximately \$656 million, roughly 159% of Gross Region Product (GRP). As noted below in the calculation of Gross Regional Product, imports and institutional sales are subtracted. Therefore, counties that import a relatively large amount of goods and services will have a reduced GRP which may lead to agricultural output being greater than GRP.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 17 agriculture, food, and food processing sectors is approximately \$246 million, or 60% of the GRP. This indicates that personal income, business income, and taxes generated by these sectors account for 60% of the total economy.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

¹ Article on building a contribution analysis in IMPLAN that avoids double counting:
https://implan.com/index.php?option=com_content&view=category&id=19

² Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

³ Value Added = Labor Income + Indirect Business Taxes + Other Property Type Income.

⁴ GRP = Final Demand of Households + Governments Expenditures + Capital + Exports - Imports - Institutional Sales

⁵ Output = Intermediate Inputs + Value Added

In the top ten by employment, Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming is the top employer in the agriculture industry with 497.6 employees. This table also shows the amount of jobs that are created by the agriculture industry in Gray County.

Top 10 Industries Affected by Employment

Sector Description:	Total Employment	Total Output
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	497.6	\$362,537,883
Wholesale trade.....	158.1	\$33,630,740
Grain farming	121.1	\$119,160,632
Truck transportation.....	83.1	\$12,641,070
All other crop farming.....	76.3	\$27,211,900
Support activities for agriculture and forestry	44.1	\$2,843,997
Farm machinery and equipment manufacturing.....	36.9	\$22,485,537
Monetary authorities and depository credit intermediation	31.4	\$5,154,730
Real estate.....	31.2	\$4,891,749
Accounting, tax preparation, bookkeeping, and payroll services	24.5	\$1,301,943

The Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming industry directly contributes approximately \$363 million to Gray County's economy. This table also shows how much revenue is generated in other industries by having a strong agriculture industry.

Top 10 Industries Affected by Output

Sector Description:	Total Employment	Total Output
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	497.6	\$362,537,883
Grain farming	121.1	\$119,160,632
Wholesale trade.....	158.1	\$33,630,740
All other crop farming.....	76.3	\$27,211,900
Farm machinery and equipment manufacturing.....	36.9	\$22,485,537
Truck transportation.....	83.1	\$12,641,070
Dairy cattle and milk production.....	23.1	\$12,121,014
Owner-occupied dwellings	0.0	\$7,144,454
Oilseed farming	0.9	\$5,774,484
Animal production, except cattle and poultry and eggs.....	18.7	\$5,316,849

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture sector and the output they contributed to Gray County's economy.

[illegible]

All 105 counties in Kansas have IMPLAN models with an agriculture contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Kansas, the retail sector was omitted.